Amendments to the Claims:

This Listing of Claims replaces all prior versions, and listings, of claims in the application.

Listing of Claims:

Claims 1-25. (Cancelled)

26. (Previously Presented) The interrogator of Claim 30, wherein the first antenna and the second antenna are positioned substantially perpendicular to each other and the first phase magnetic field component and the second phase magnetic field component are in quadrature.

27. (Previously Presented) The interrogator of Claim 30, further comprising:

a first capacitor having a first end and a second end opposite said first end, said first end of said first capacitor coupled to a first end of said first antenna, said second end of said first capacitor coupled to a second end of said first antenna; and

a second capacitor having a first end and a second end opposite said first end, said first end of said second capacitor coupled to a first end of said second antenna, said second end of said second capacitor coupled to a second end of said second antenna.

28. (Previously Presented) The interrogator of Claim 30, wherein said detector further comprises a pickup coil positioned perpendicular to both of said first and second antennae.

29. (Previously Presented) The interrogator of Claim 30, wherein said driver circuit further comprises:

an oscillator adapted to generate a first signal at twice a carrier frequency; and

a phase splitter coupled to said oscillator and adapted to split said first signal into an in-phase component to be provided to said first antenna and a quadrature phase component to be provided to said second antenna.

30. (Previously Presented) A radio frequency identification system interrogator, comprising:

a first antenna adapted to generate a first magnetic field component having a first phase;

a second antenna adapted to generate a second magnetic field component having a second phase;

a driver circuit coupled to the first and second antennae to provide at least one signal to cause the generation of first and second magnetic field components; whereby said first and second magnetic fields form a time varying composite magnetic field;

a detector for detecting a transponder signal modulated on said magnetic field;

a processor for processing the transponder signal; and

wherein said processor further comprises:

at least one potentiometer coupled to said detector and adapted to nullify interference on said detected signal;

an amplifier coupled to said at least one potentiometer and adapted to amplify said detected signal;

a filter coupled to said amplifier and adapted to filter said detected signal;

a demodulator coupled to said filter and adapted to demodulate said detected signal;

at least one decoder coupled to said demodulator and adapted to decode said demodulated signal; and

a signal processor coupled to said at least one decoder and adapted to process said decoded signal.

31. (Previously Presented) The interrogator of Claim 30, further comprising a display coupled to said processor, wherein said processor provides said processed signal to said display, said display adapted to display said processed signal in a format understandable by a user.

32. (Previously Presented) The interrogator of Claim 30, further comprising an audio transducer coupled to said processor, said audio transducer adapted to receive a signal from said processor and produce an audible tone when a transponder is detected.

33. (Previously Presented) The interrogator of Claim 30, further comprising a third antenna adapted to generate a third magnetic field component, said driver further coupled to said third antenna and driving said third antenna with a signal to generate said third magnetic field component to precess said composite magnetic field.

34. (Previously Presented) The interrogator of Claim 33, wherein said third antenna is perpendicular to said first and second antenna.

35. (Previously Presented) The interrogator of Claim 33, further comprising a capacitor having a first end and a second end opposite said first end, said capacitor disposed between said third antenna and said driver, said first end coupled to said driver, and said second end coupled to a first end of said third antenna.

36. (Previously Presented) The interrogator of Claim 35, further comprising a second capacitor having a first end and a second end opposite said first end, said second capacitor disposed between said capacitor and said third antenna, said first and second end of said second capacitor coupled to a first and second end of said third antenna, respectively.

37. (Previously Presented) The interrogator of Claim 30, wherein the driver circuit provides a time varying signal to cause said composite magnetic field to rotate.

Claim 38. (Cancelled)

Claims 39-41. (Cancelled)

42. (Previously Presented) The interrogator of Claim 30, further comprising a third antenna which generates a third magnetic field component which precesses said composite magnetic field.

Claim 43. (Cancelled)

44. (Previously Presented) An interrogator for an identification system, comprising:

a first coil;

a second coil;

a driver coupled to and driving said first coil and said second coil by providing a time varying signal to each of said first and second coils to cause said coils to generate a rotating magnetic field;

a detector for detecting a transponder signal modulated on said rotating magnetic field; and

a processor for processing said transponder signal;

wherein said processor further comprises: at least one potentiometer coupled to said detector and adapted to nullify interference on said transponder signal; an amplifier coupled to said at least one potentiometer and adapted to amplify said transponder signal; a filter coupled to said amplifier and adapted to filter said transponder signal; a demodulator, coupled to said filter and adapted to demodulate said transponder signal;

at least one decoder coupled to said demodulator and adapted to decode said transponder signal; and a signal processor coupled to said at least one decoder and adapted to process said transponder signal.

45. (Previously Presented) The interrogator of Claim 44, wherein said driver splits a generated signal into an in-phase component to drive said first coil and a quadrature phase component to drive said second coil.

Claims 46-62. (Cancelled)

63. (Previously Presented) A radio frequency identification system interrogator, comprising:

a first antenna adapted to generate a first magnetic field component having a first phase;

a second antenna adapted to generate a second magnetic field component having a second phase;

a driver circuit coupled to the first and second antennae to provide at least one signal to cause the generation of first and second magnetic field components; whereby said first and second magnetic fields form a time varying composite magnetic field; and

a third antenna adapted to generate a third magnetic field component, said driver further coupled to said third antenna and driving said third antenna with a signal to generate said third magnetic field component to precess said composite magnetic field.

64. (Previously Presented) The interrogator of Claim 63, wherein said third antenna is perpendicular to said first and second antennae.

65. (Previously Presented) The interrogator of Claim 63, further comprising a capacitor having a first end and a second end opposite said first end, said capacitor

disposed between said third antenna and said driver, said first end coupled to said driver, and said second end coupled to a first end of said third antenna.

66. (Previously Presented) The interrogator of Claim 65, further comprising a second capacitor having a first end and a second end opposite said first end, said second capacitor disposed between said capacitor and said third antenna, said first and second end of said second capacitor coupled to a first and second end of said third antenna, respectively.

67. (Previously Presented) A radio frequency identification system interrogator, comprising:

a first antenna adapted to generate a first magnetic field component having a first phase;

a second antenna adapted to generate a second magnetic field component having a second phase;

a driver circuit coupled to the first and second antennae to provide at least one signal to cause the generation of first and second magnetic field components; whereby said first and second magnetic field components form a time varying composite magnetic field; and

a third antenna which generates a third magnetic field component which precesses said composite magnetic field.

68. (Previously Presented) A radio frequency identification system interrogator, comprising:

a first antenna adapted to generate a first magnetic field component having a first phase;

a second antenna adapted to generate a second magnetic field component having a second phase;

a driver circuit coupled to the first and second antennae to provide at least one signal to generate first and second magnetic field components; whereby said first and second magnetic field components form a time varying composite magnetic field; and

a series drive capacitor for each of said antennae and through which said antennae are driven, and a parallel tank capacitor for each said antenna, wherein said series drive capacitor and said parallel tank capacitor provide an impedance matching network.

69. (Previously Presented) The interrogator of Claim 68, further comprising a detector for detecting a transponder signal modulated on said magnetic field.

70. (Previously Presented) The interrogator of Claim 69, further comprising a processor for processing the transponder signal.

71. (Previously Presented) The interrogator of Claim 70, further comprising a display coupled to said processor, wherein said processor provides said processed signal to said display, said display adapted to display said processed signal in a format understandable by a user.

72. (Previously Presented) The interrogator of Claim 70, further comprising an audio transducer coupled to said processor, said audio transducer adapted to receive a signal from said processor and produce an audible tone when a transponder is detected.

73. (Previously Presented) The interrogator of Claim 69, wherein said detector further comprises a pickup coil positioned perpendicular to both of said first and second antennae.

74. (Previously Presented) The interrogator of Claim 68, wherein said first antenna and said second antenna are positioned substantially perpendicular to each other and said first phase magnetic field component and said second phase magnetic field component are in quadrature.

75. (Previously Presented) The interrogator of Claim 68, wherein said driver circuit includes: an oscillator adapted to generate a first signal at twice a carrier frequency; and a phase splitter coupled to said oscillator and adapted to split said first signal into an in-phase component to be provided to said first antenna and a quadrature phase component to be provided to said second antenna.

76. (Previously Presented) The interrogator of Claim 68, further comprising a third antenna adapted to generate a third magnetic field component, said driver further coupled to said third antenna and driving said third antenna with a signal to generate said third magnetic field component to precess said composite magnetic field.

77. (Previously Presented) The interrogator of Claim 68, wherein said third antenna is perpendicular to said first and second antennae.

78. (Previously Presented) The interrogator of Claim 68, wherein said driver circuit provides a time varying signal to cause said composite magnetic field to rotate.

79. (Previously Presented) An interrogator for an inductively-coupled identification system, comprising:

a plurality of coil means for generating a composite rotating magnetic field having an approximately constant amplitude in all orientations relative to a transponder; and

a series drive capacitor for each of said coil means and through which said coil means are driven, and a parallel tank capacitor for each of said coil means, wherein

said series drive capacitors and said parallel tank capacitors provide an impedance matching network.

80. (Previously Presented) The interrogator of Claim 79, wherein said series drive capacitor and said parallel tank capacitors are adapted to allow the independent adjustment of both resonant frequency and input impedance of the interrogator.

81. (Previously Presented) The interrogator of Claim 79, wherein said plurality of coil means includes a first coil adapted to generate a first magnetic field component having a first phase and a second coil adapted to generate a second magnetic field component having a second phase.

82. (Previously Presented) The interrogator of Claim 81, wherein said first and second coils are positioned substantially perpendicular to each other.

83. (Previously Presented w) The interrogator of Claim 81, wherein said first phase and said second phase are in quadrature.

84. (Previously Presented) The interrogator of Claim 81, further comprising a pickup coil positioned perpendicular to both of said first and second coils.

85. (Previously Presented) The interrogator of Claim 79, further comprising a detector which detects a transponder signal modulated on said composite rotating magnetic field.

86. (Previously Presented) The interrogator of Claim 85, further comprising a processor which processes said transponder signal.

87. (Previously Presented) The interrogator of Claim 79, further comprising a precession coil which generates a magnetic field component to precess said composite rotating magnetic field.

88. (Previously Presented) The interrogator of Claim 87, wherein said precession coil is aligned relative to said plurality of coil means and driven with a signal offset in frequency from at least one signal driving said plurality of coil means.

89. (Previously Presented) The interrogator of Claim 79, wherein said composite rotating magnetic field does not make a complete rotation and changes direction sufficiently to capture transponders with unfavorable orientations.

90. (Previously Presented) The interrogator of Claim 79, wherein interrogator coils of said plurality of coil means are disposed perpendicular to one another.

91. (Previously Presented) The interrogator of Claim 90, wherein a transponder in the plane of the axes of said coils senses an alternating magnetic field of full amplitude regardless of the angle of a transponder coil of the transponder with respect to said coils of the interrogator.

92. (Previously Presented) An inductively-coupled identification system interrogator, comprising:

coil means for generating a composite rotating magnetic field having an approximately constant amplitude in all orientations relative to a transponder; and

said coil means including a series drive capacitor for each coil of said coil means and through which said coils are driven, and a parallel tank capacitor for each of said coils, wherein said series drive capacitors and said parallel tank capacitors together allow for the independent adjustment of both resonant frequency and input impedance of the interrogator.